REPORT OF 040421

last update on Wed Apr 21 12:53:02 GMT 2004

1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA_WVS_1P) products,
which are the available few hours after the acquisition, on the high rate browse (BP) products
and on the Module Stepping (MS) product.

2 - Summary

2.1 - Instrument Unavailability

-ASAR planned unavailability from 20-APR-2004 08:15:46 to 20-APR-2004 08:23:31 to investigate module B2-30 H/Tx problem.
-ASAR not planned unavailability from 20-APR-2004 10:00:54 to 20-APR-2004 11:56:40.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products

2.3 - Data Analysis

-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
The MS products analysis shows a failure in TX module 30 tile B2 (under investigation).

- ASA_MS__0PNPDK20040420_204718_000000152026_00114_11190_0084.N1
- ASA_MS__0PNPDK20040420_204838_000000152026_00114_11190_0085.N1

Polarisation	Start Time
V	20040420 204838
H	20040420 204718

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒

MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

4.2 - Cyclic statistics

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.579031	0.005402	0.019310
7	P1	-3.299751	0.010483	0.009443
11	P1	-4.633720	0.021561	0.016552
15	P1	-4.985558	0.037843	0.016032
19	P1	-3.346037	0.006592	-0.038064
22	P1	-4.516756	0.014726	0.021021
24	P1	-5.032882	0.015006	0.055895
28	P1	-4.588429	0.013572	-0.033488

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.396385	0.079882	-0.011197
7	P2	-22.874537	0.123079	-0.021924
11	P2	-15.915341	0.154703	0.118259
15	P2	-7.160172	0.090390	0.030588
19	P2	-9.512506	0.170955	0.041436
22	P2	-17.657658	0.100920	0.055570
24	P2	-20.997536	0.112781	0.026358
28	P2	-16.604246	0.081840	-0.015516

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.129729	0.003078	-0.012963
7	P3	-8.129728	0.003078	-0.012963
11	P3	-8.129724	0.003078	-0.012986
15	P3	-8.129715	0.003078	-0.013028
19	P3	-8.129710	0.003078	-0.013066
22	P3	-8.129706	0.003078	-0.013093

24	P3	-8.129700	0.003078	-0.013150
28	P3	-8.129550	0.003078	-0.012544

4.3 - cal pulses monitoring (all rows)

5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000479523
	stdev	2.37107e-07
MEAN Q	mean	0.000483660
	stdev	2.70510e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127778
	stdev	0.00118893
STDEV Q	mean	0.128033
	stdev	0.00120261

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

No anomalies observed in Doppler evolution.
Analysis performed over the last 35 days.

6.1 - Unbiased Doppler Error

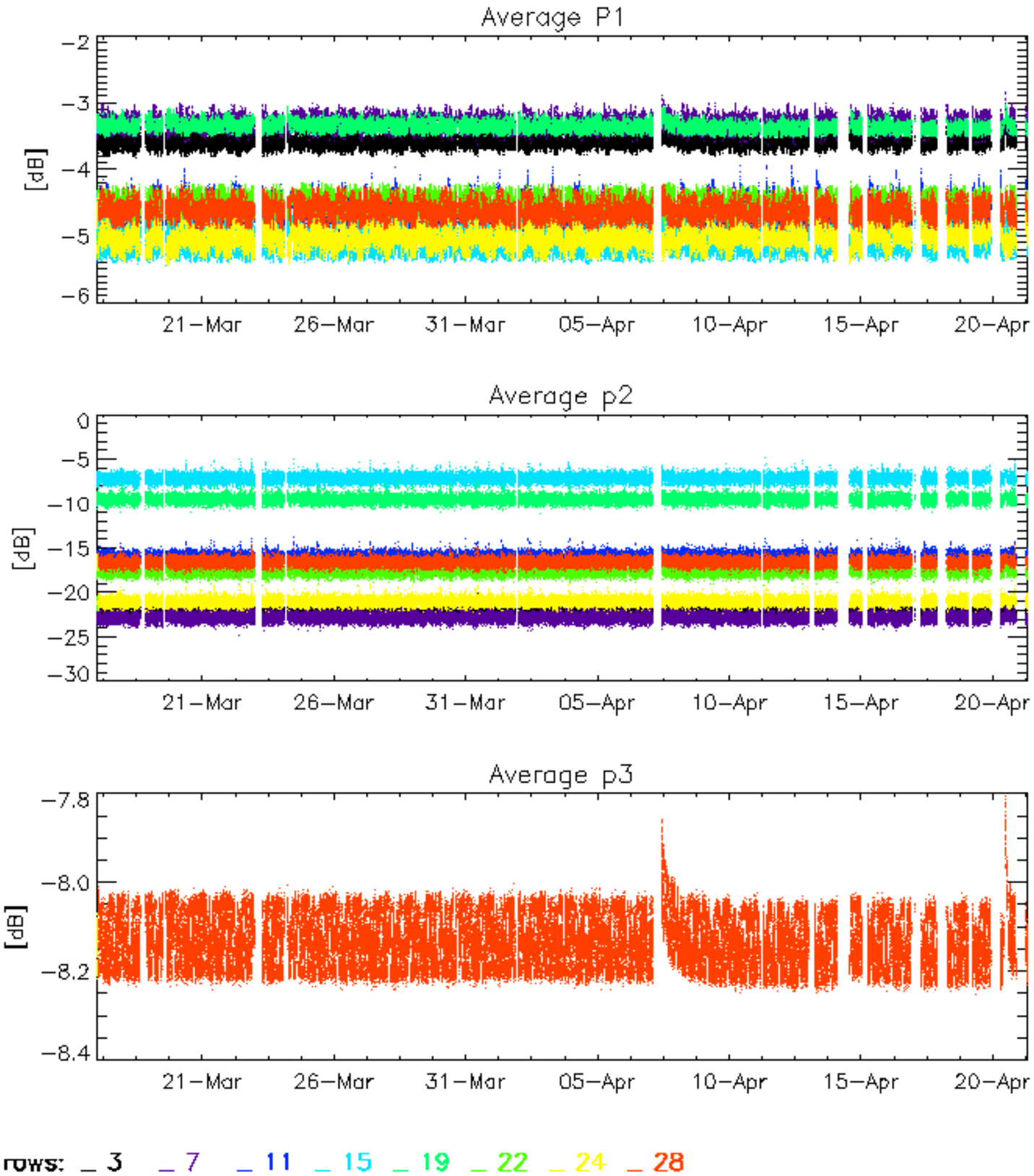
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

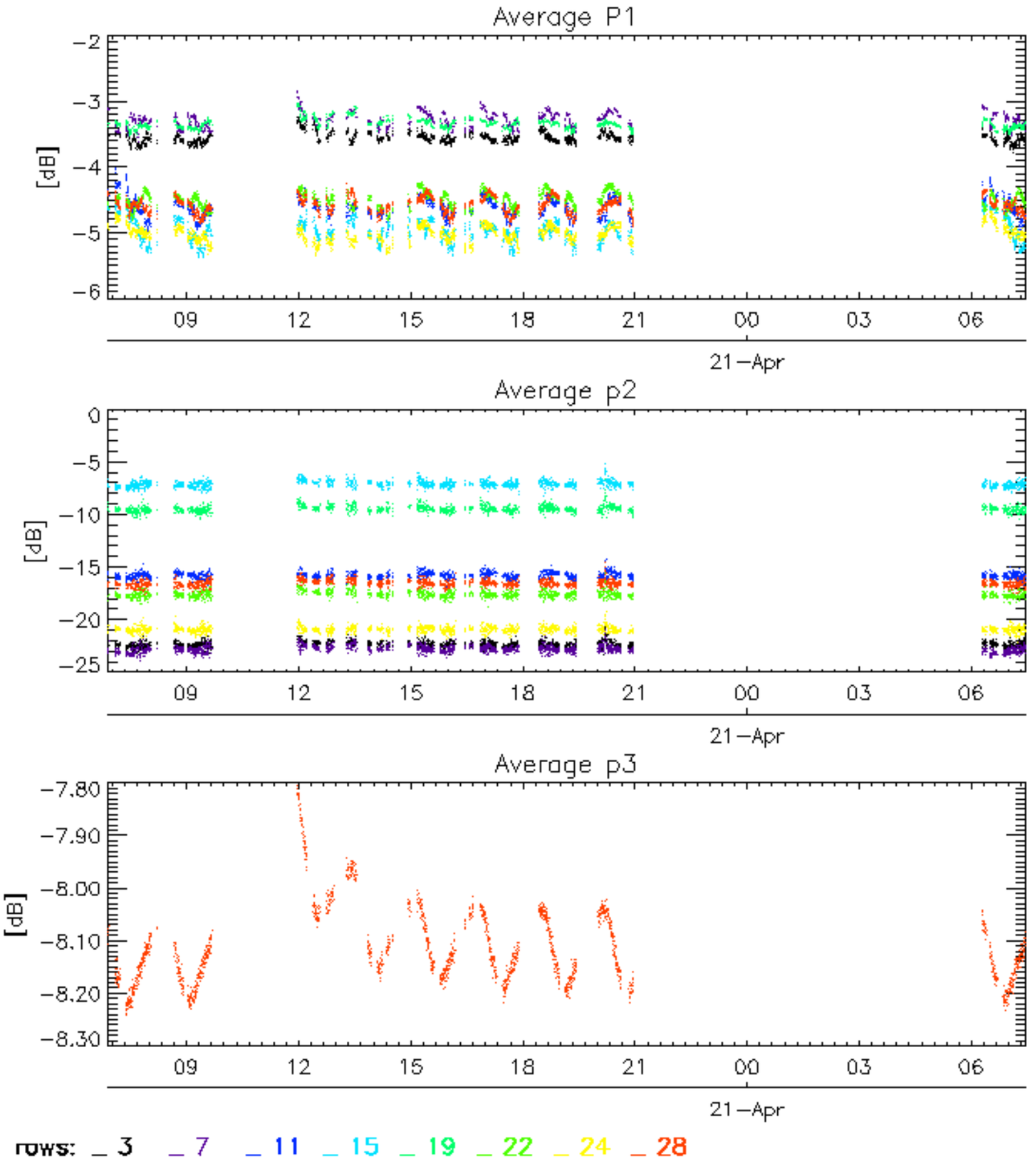
6.2 - Absolute Doppler

Evolution of Absolute Doppler
Acsending
Descending

6.3 - Doppler evolution versus ANX

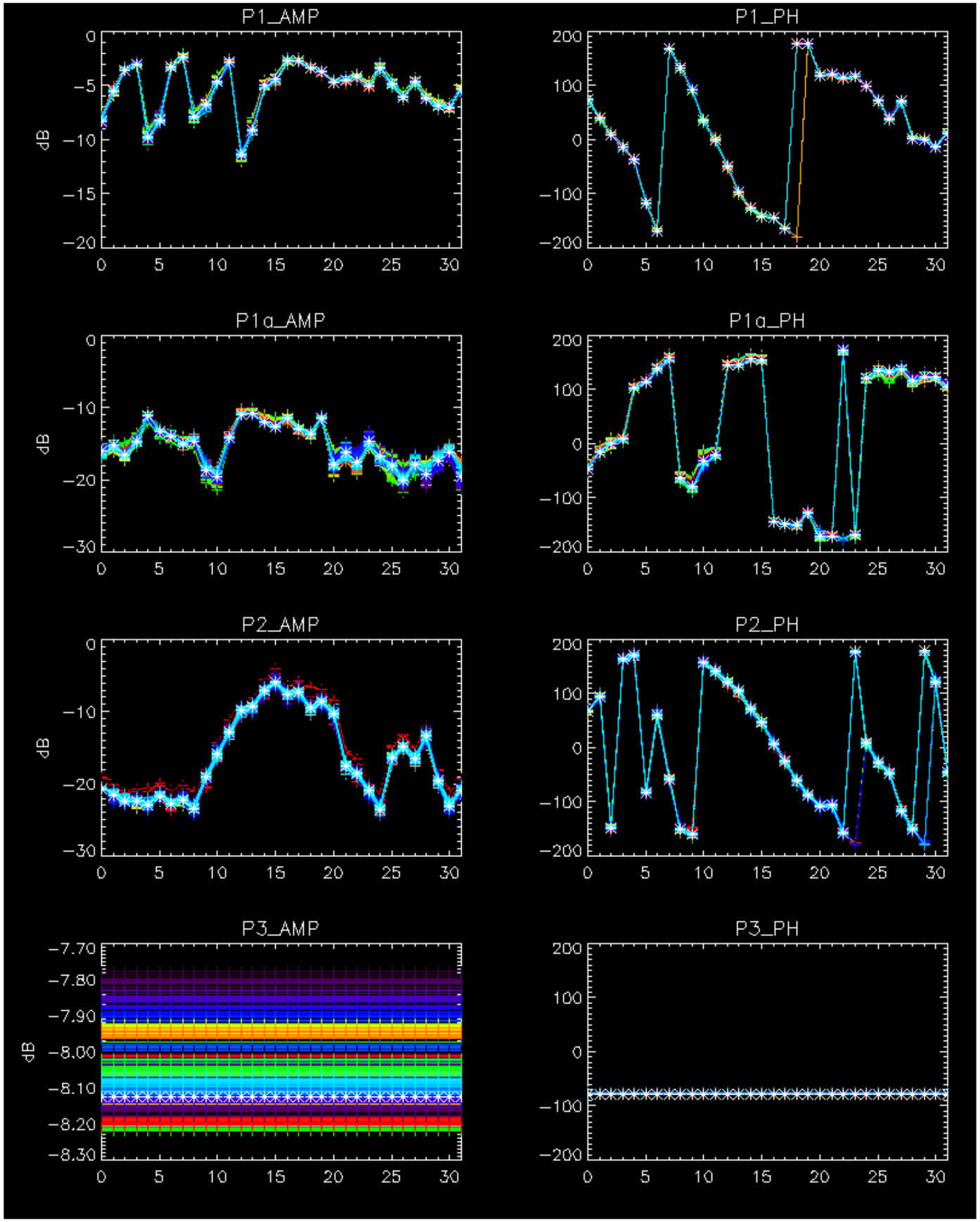
Evolution Doppler error versus ANX
☒
Evolution Doppler error versus ANX
☒


Average P1
[dB]
−2
−3
−4
−5
−6
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
Average p2
[dB]
0
−5
−10
−15
−20
−25
−30
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
Average p3
[dB]
−7.8
−8.0
−8.2
−8.4
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28


Average P1
[dB]
−2
−3
−4
−5
−6
09
12
15
18
21
00
03
06
21−Apr
Average p2
[dB]
0
−5
−10
−15
−20
−25
09
12
15
18
21
00
03
06
21−Apr
Average p3
[dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
09
12
15
18
21
00
03
06
21−Apr
rows: 3 7 11 15 19 22 24 28

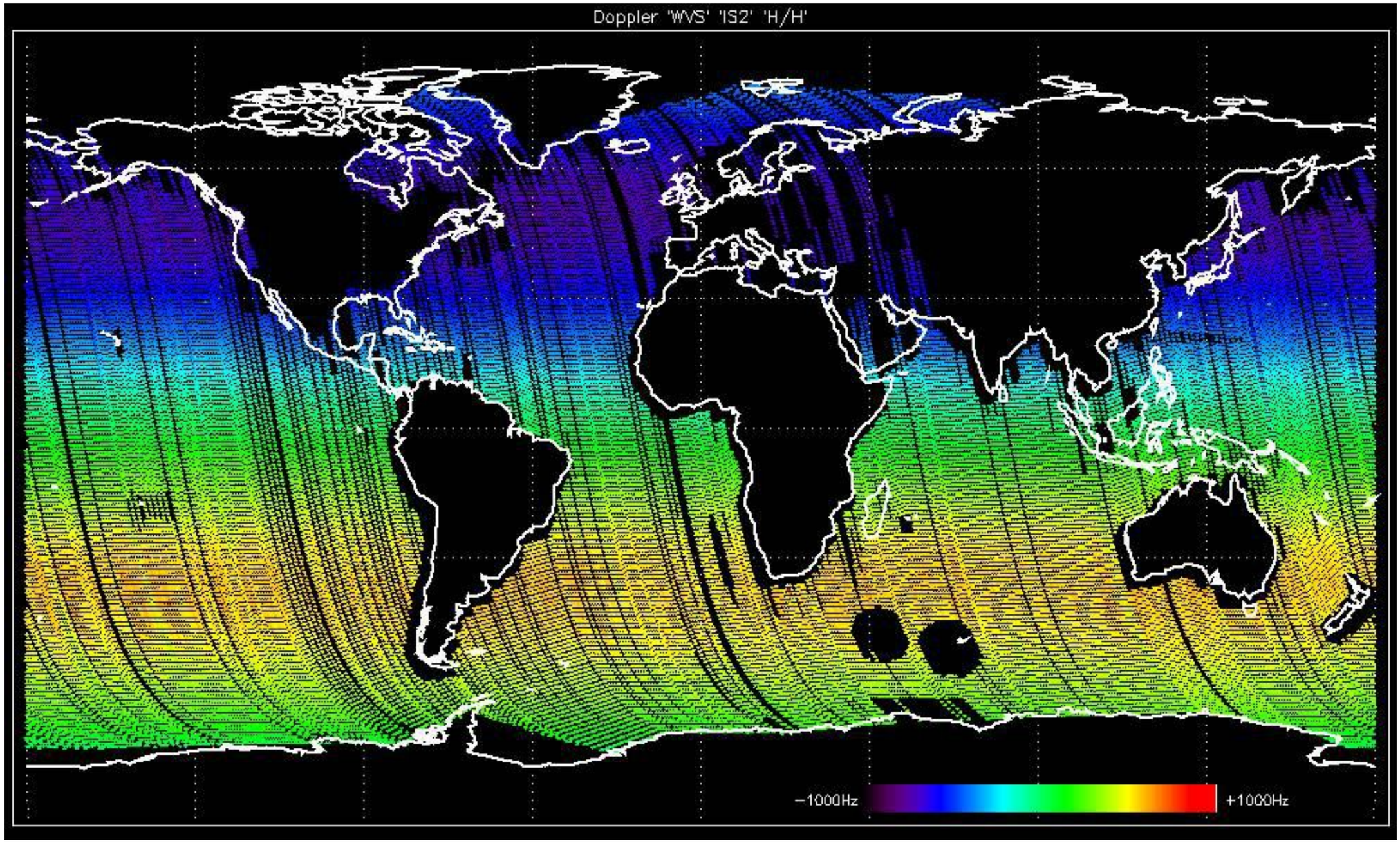
No anomalies observed on available browse products

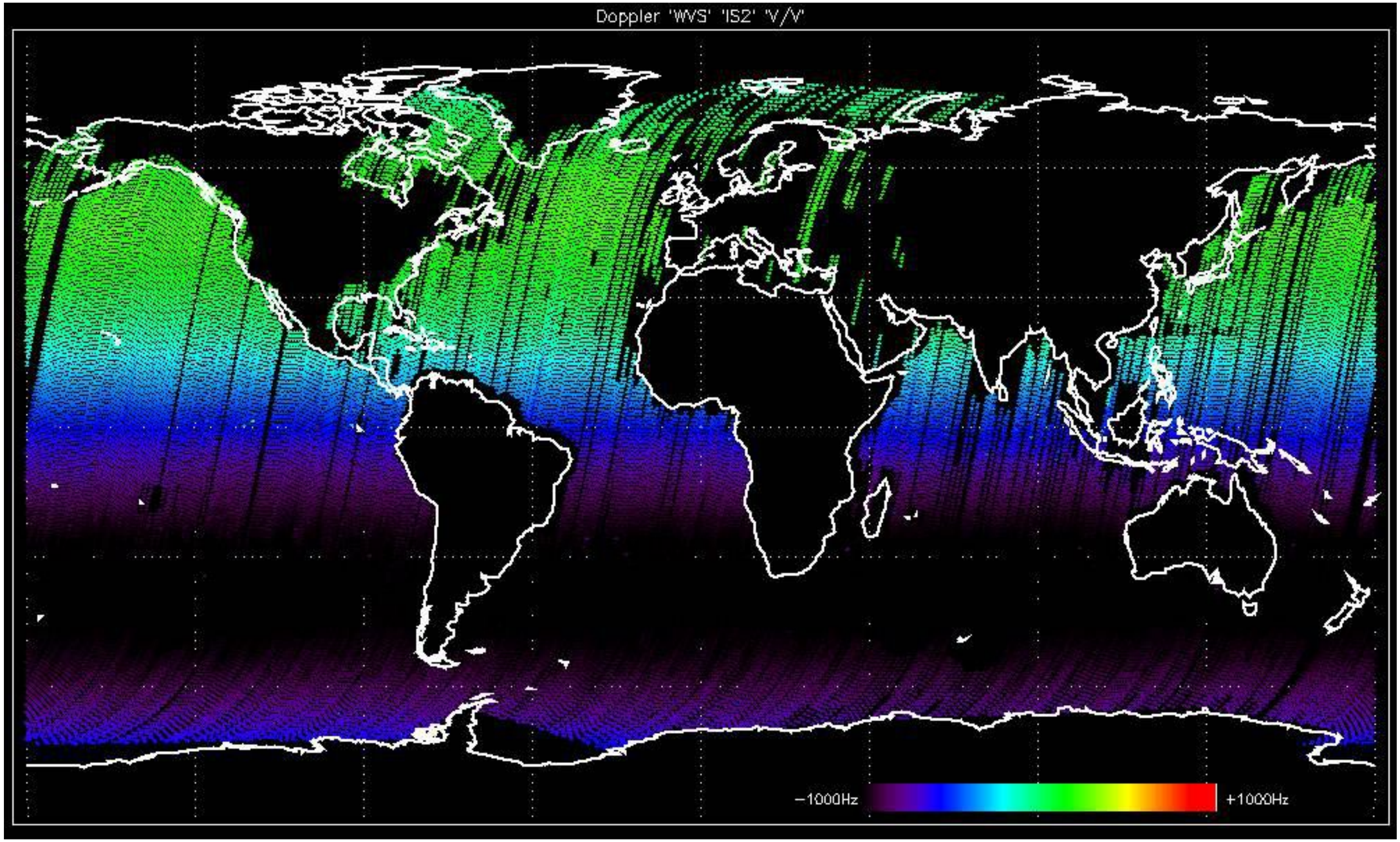
No anomalies observed.

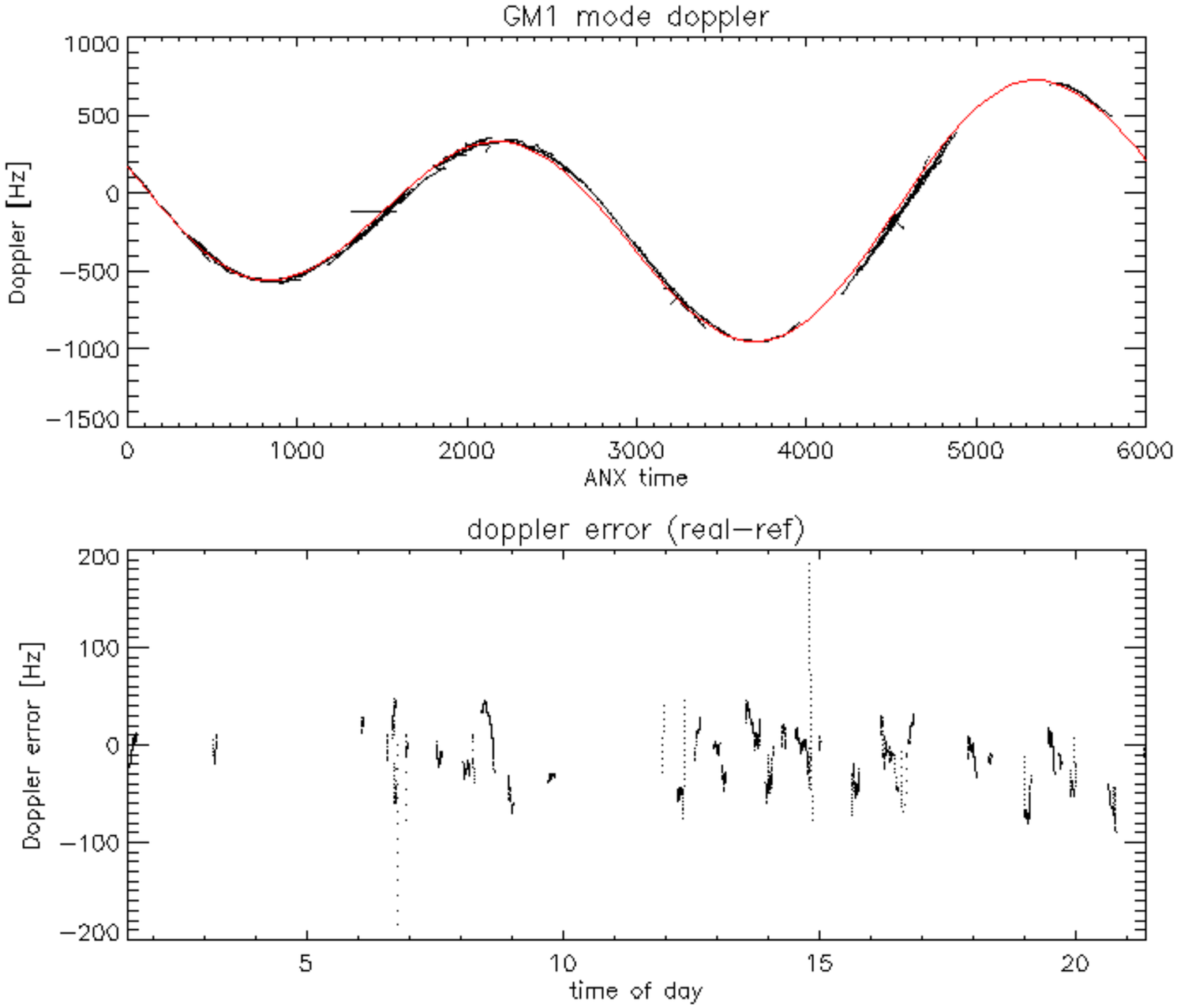

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.70
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

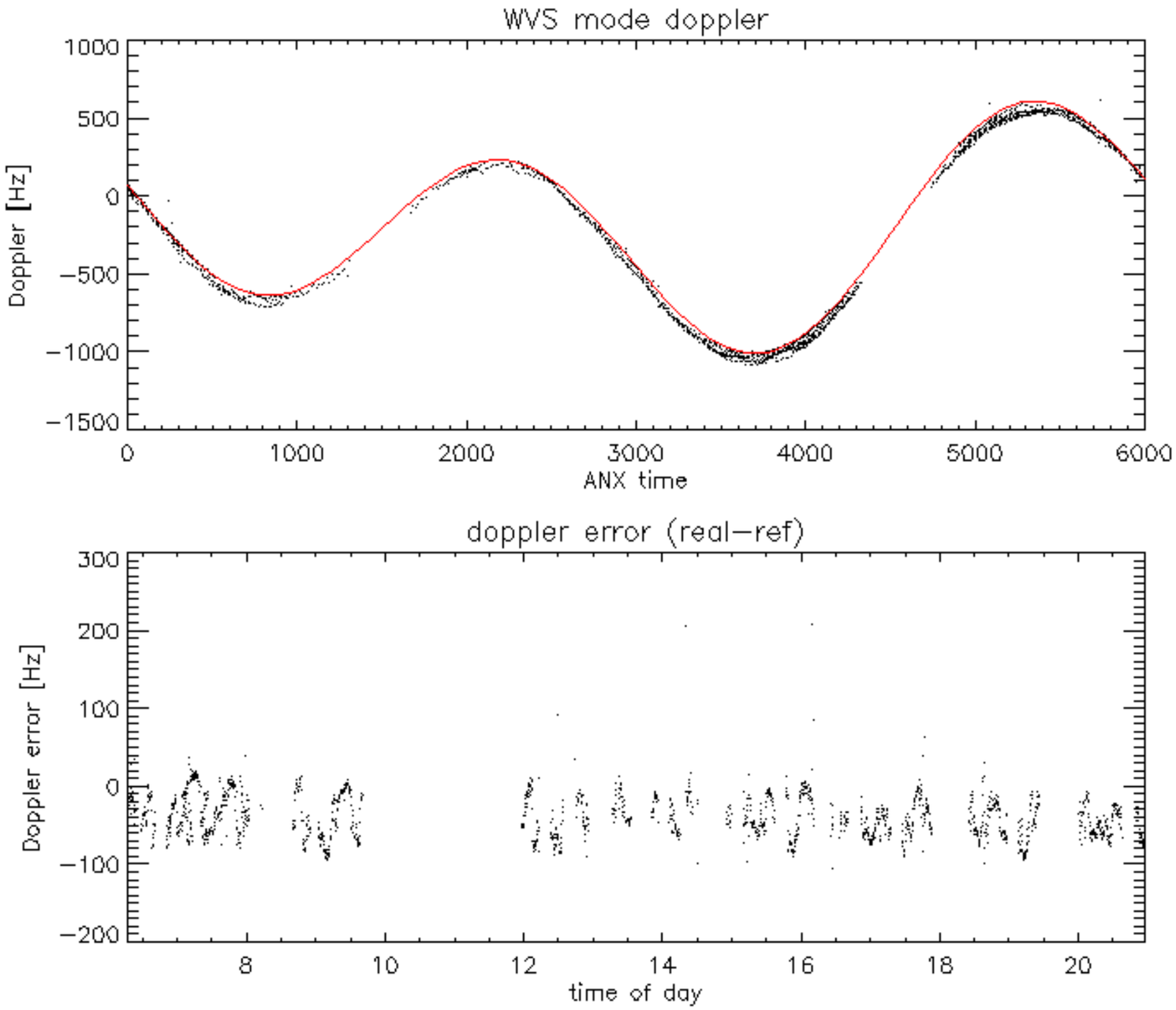
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

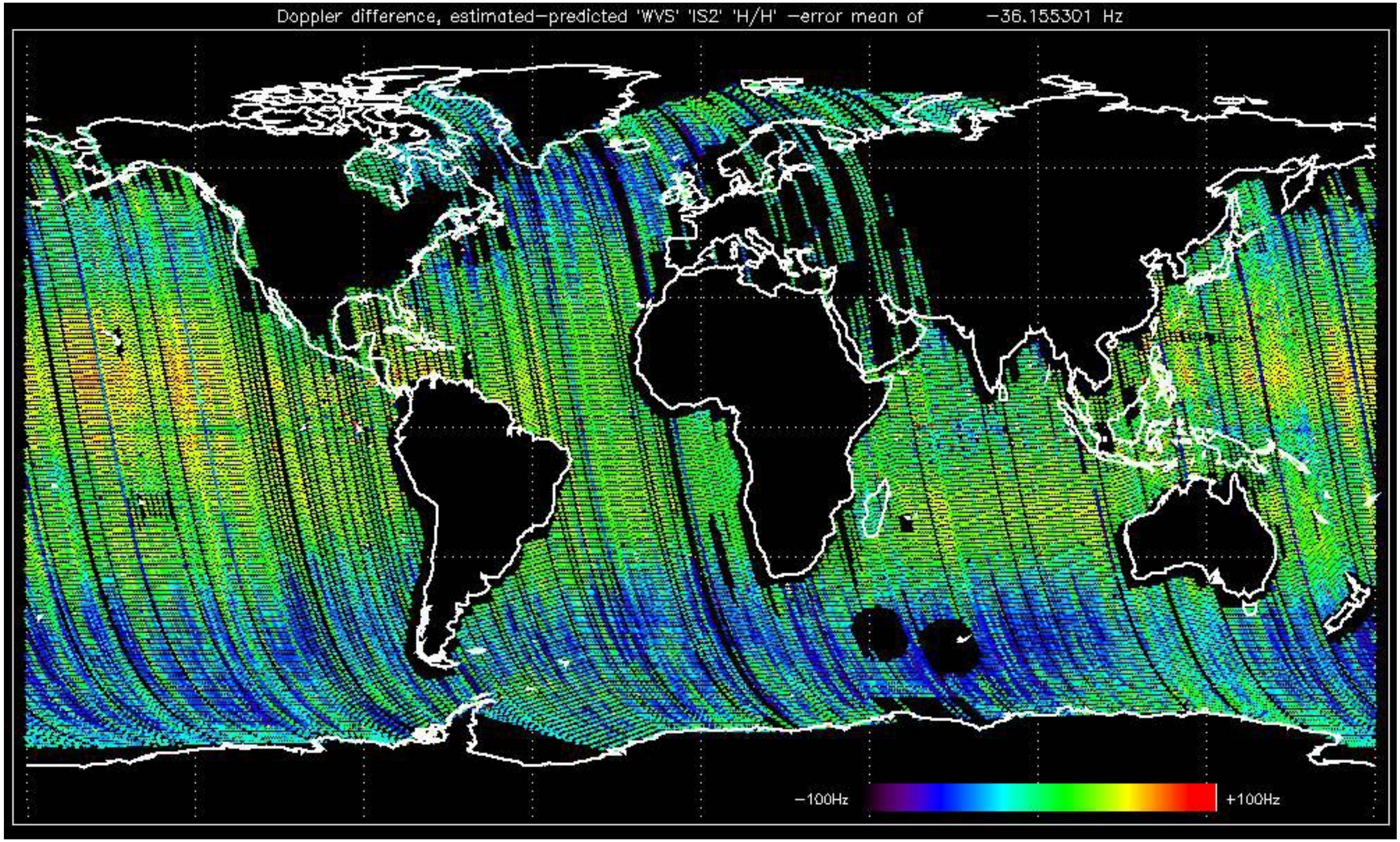
No anomalies observed in Doppler evolution.
Analysis performed over the last 35 days.

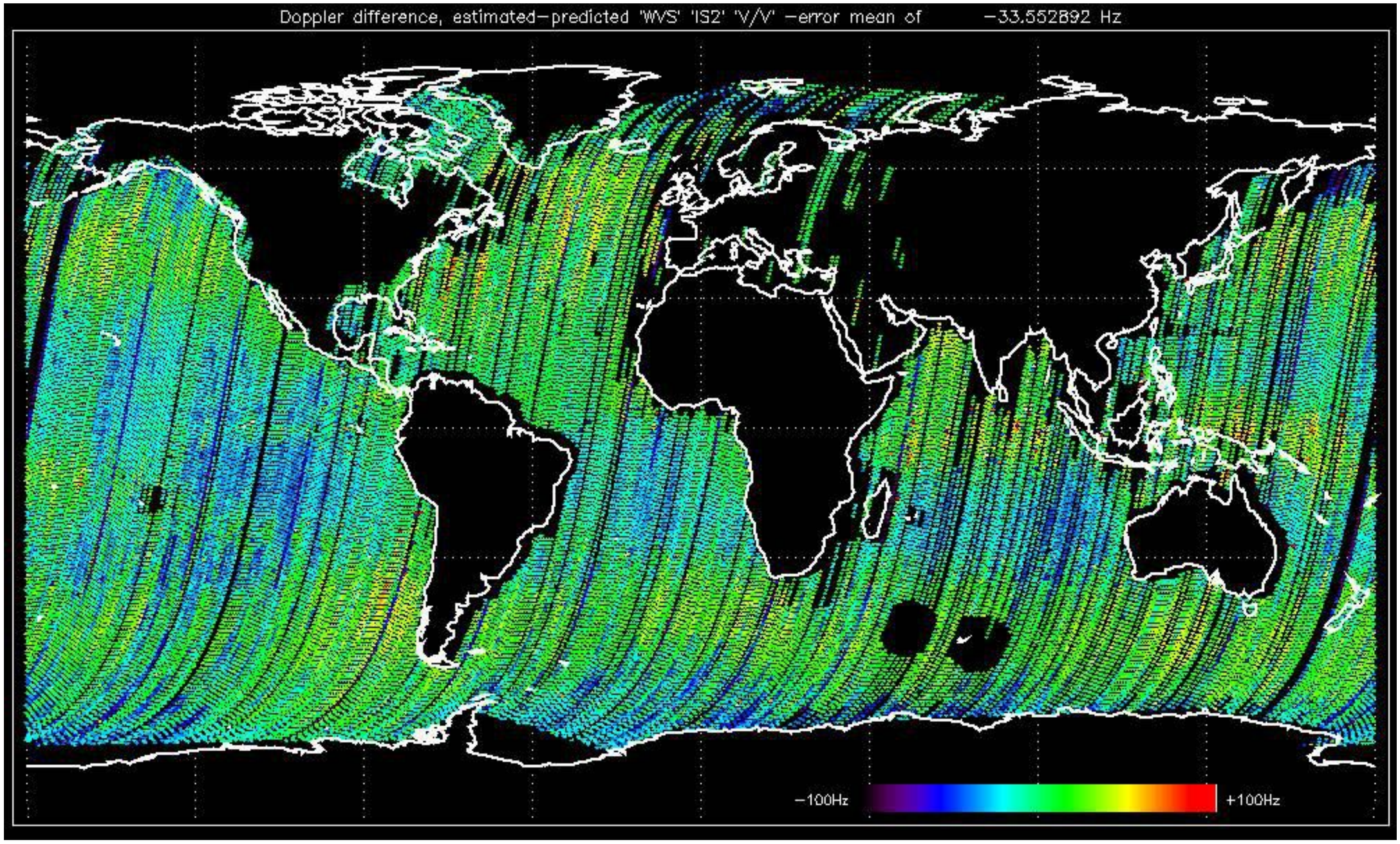

Doppler 'WVS' 'IS2' 'H/H'
−1000Hz
+1000Hz


Doppler 'WVS' 'IS2' 'V/V'
−1000Hz
+1000Hz


GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
200
100
0
−100
−200
5
10
15
20
time of day


WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
300
200
100
0
−100
−200
8
10
12
14
16
18
20
time of day

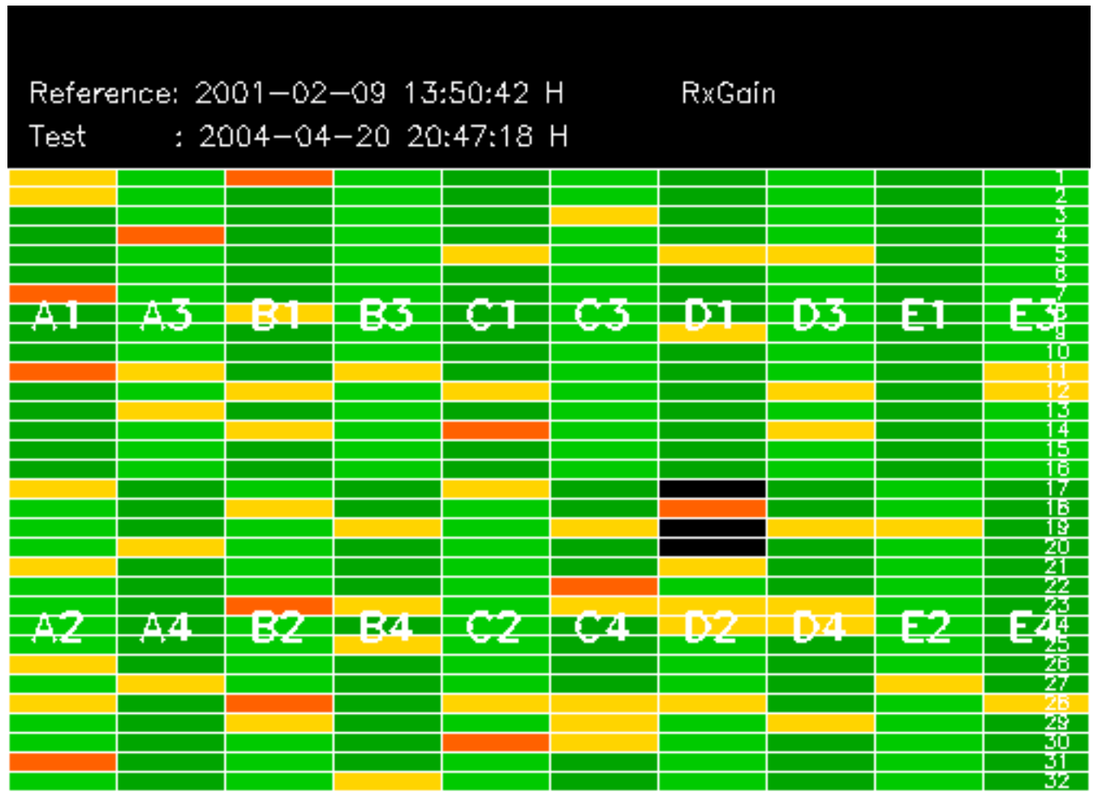

Doppler difference, estimated−predicted 'WVS' 'IS2' 'H/H' −error mean of −36.155301 Hz
−100Hz
+100Hz

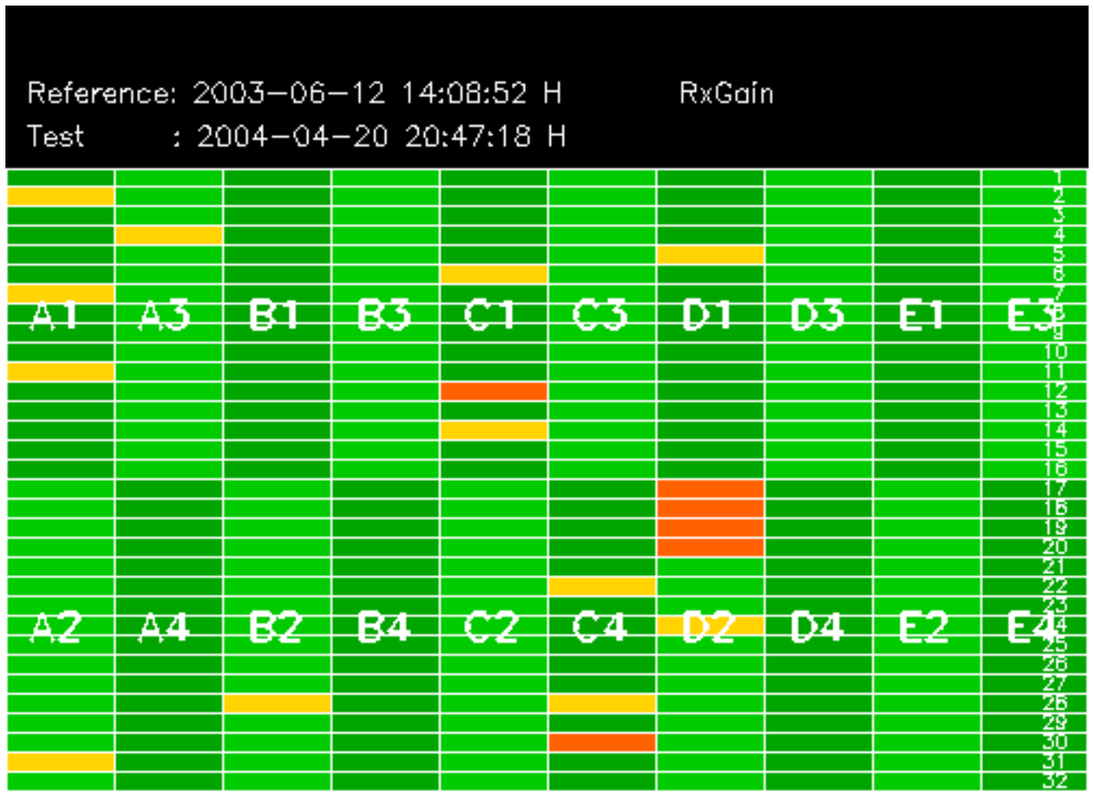

Doppler difference, estimated−predicted 'WVS' 'IS2' 'V/V' −error mean of −33.552892 Hz
−100Hz
+100Hz

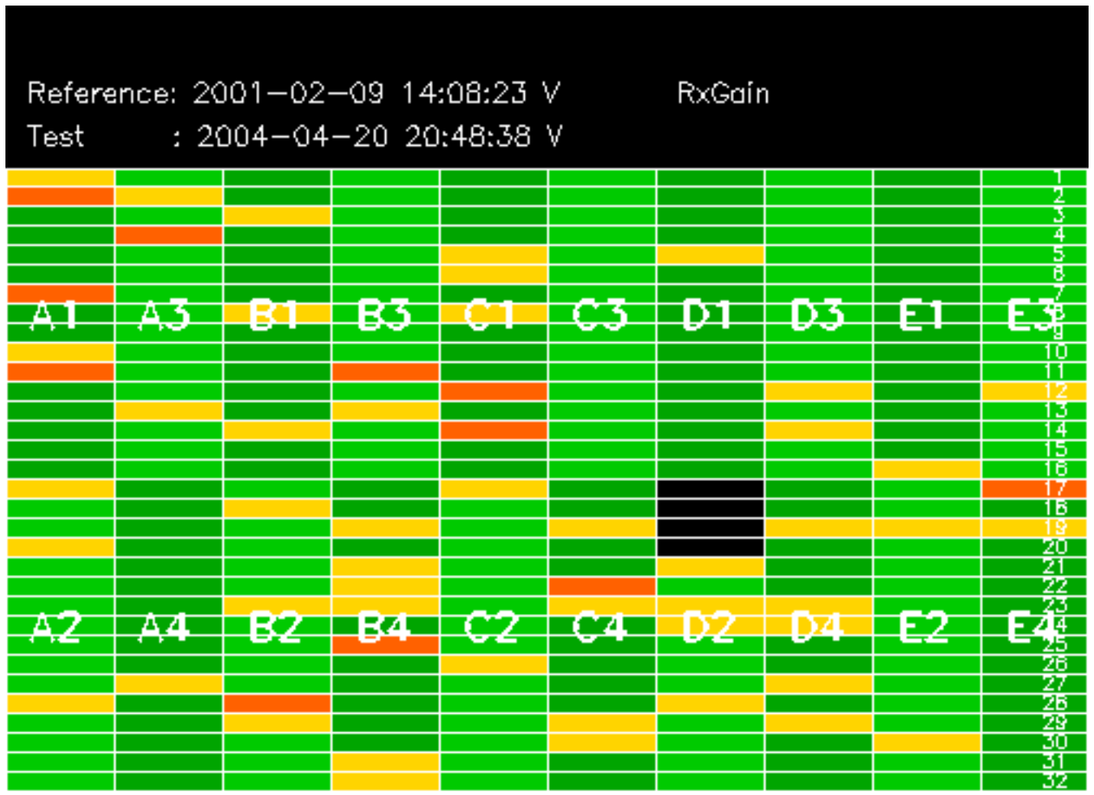
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
The MS products analysis shows a failure in TX module 30 tile B2 (under investigation).

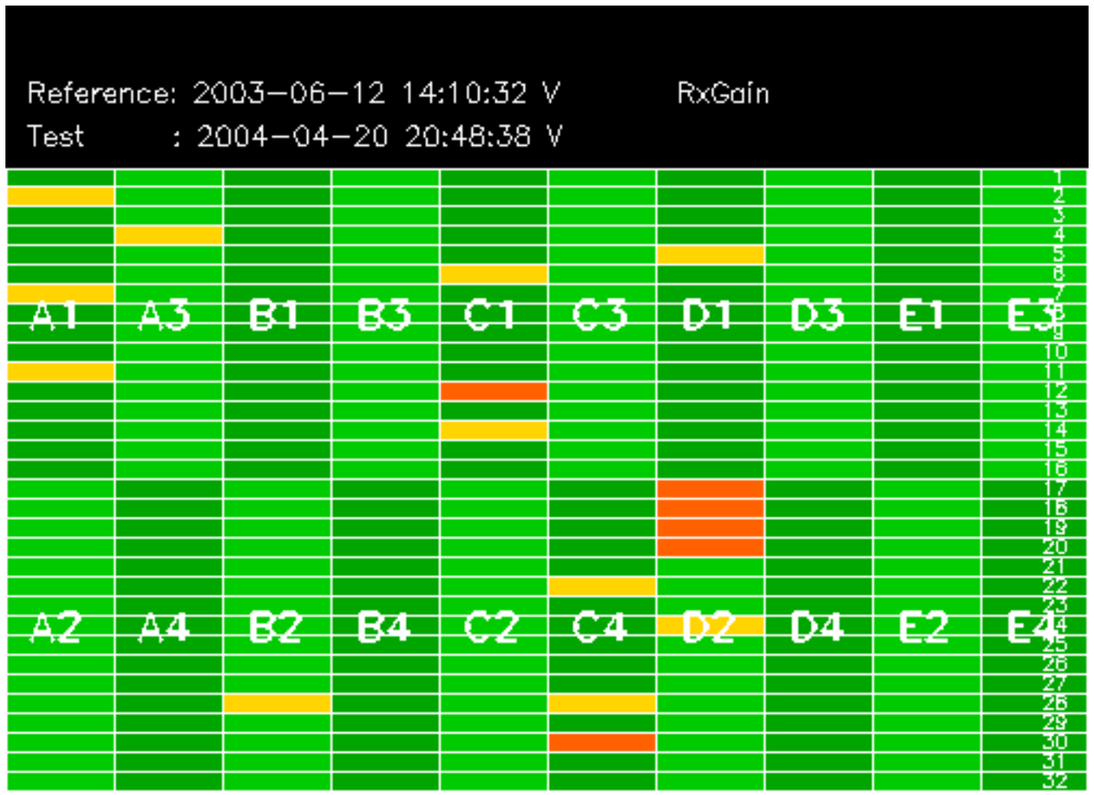
- ASA_MS__0PNPDK20040420_204718_000000152026_00114_11190_0084.N1
- ASA_MS__0PNPDK20040420_204838_000000152026_00114_11190_0085.N1

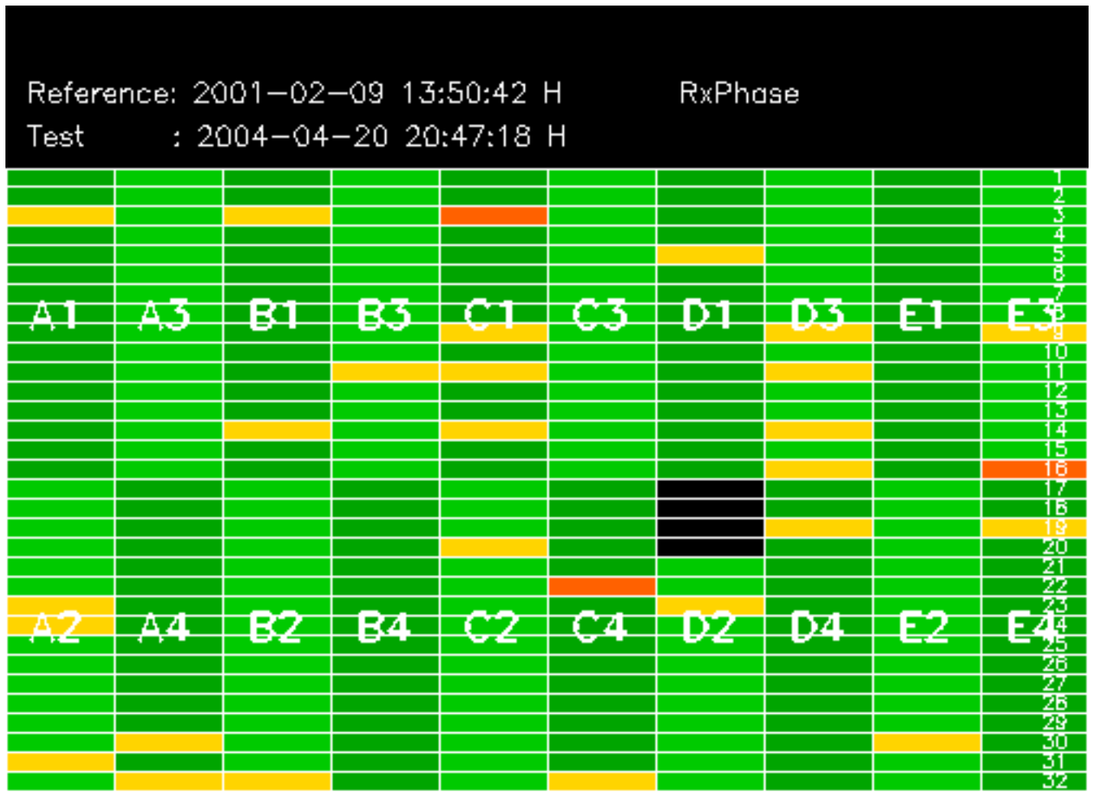
No anomalies observed.

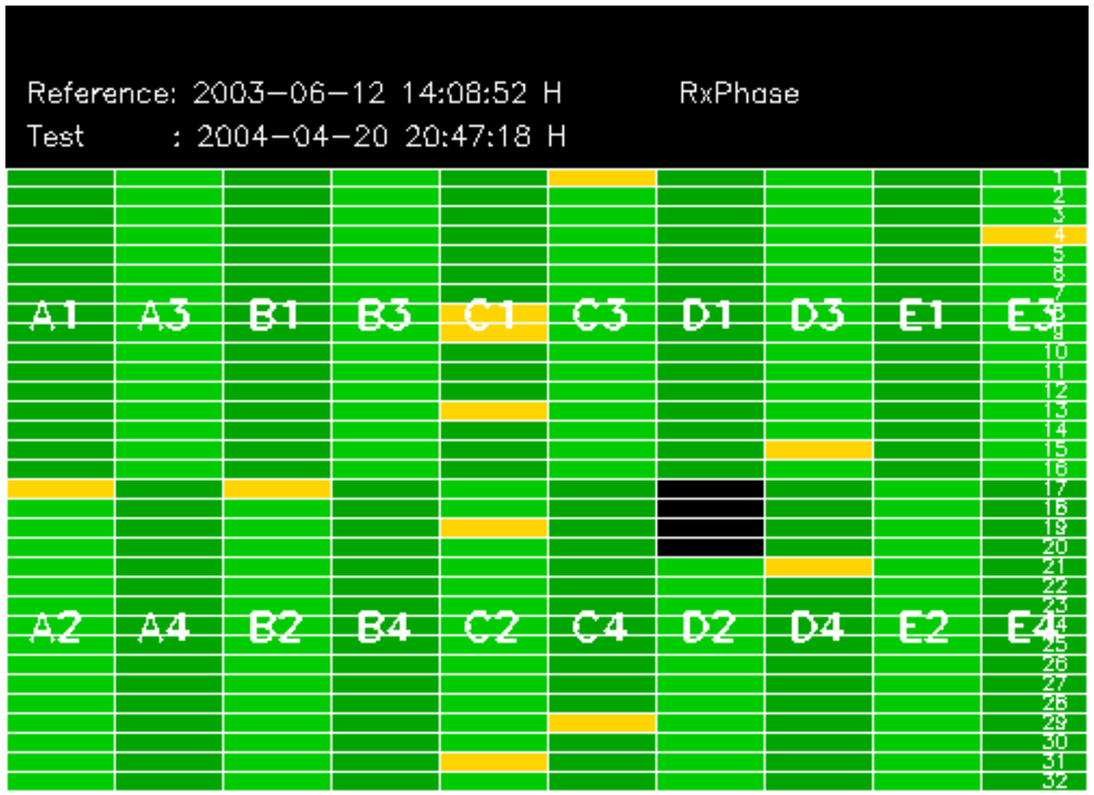

Reference: 2001-02-09 13:50:42 H
Test : 2004-04-20 20:47:18 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

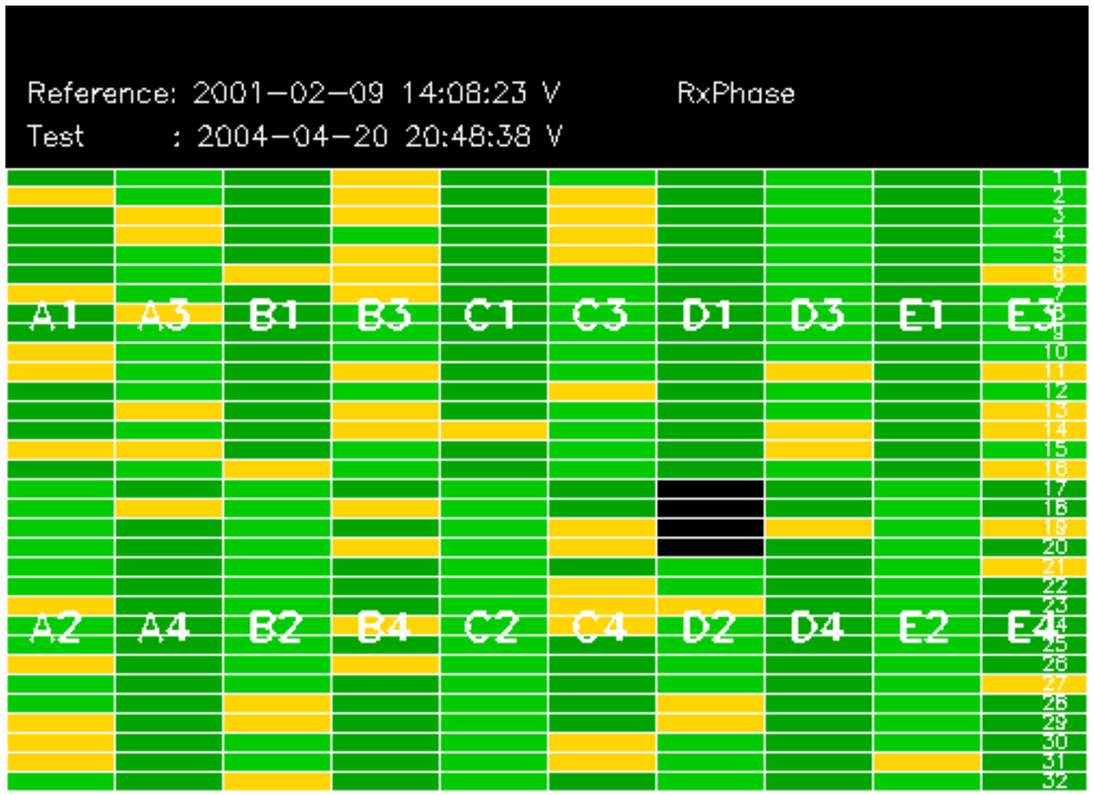

Reference: 2003-06-12 14:08:52 H
Test : 2004-04-20 20:47:18 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

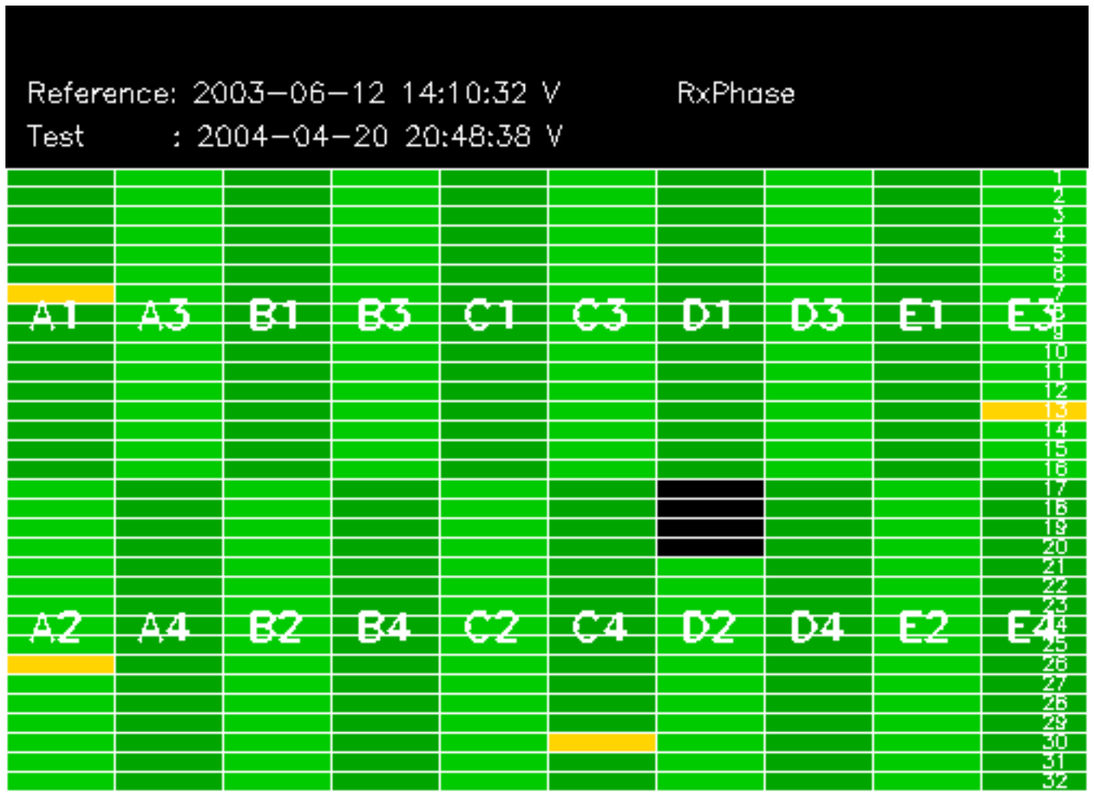

Reference: 2001-02-09 14:08:23 V
Test : 2004-04-20 20:48:38 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

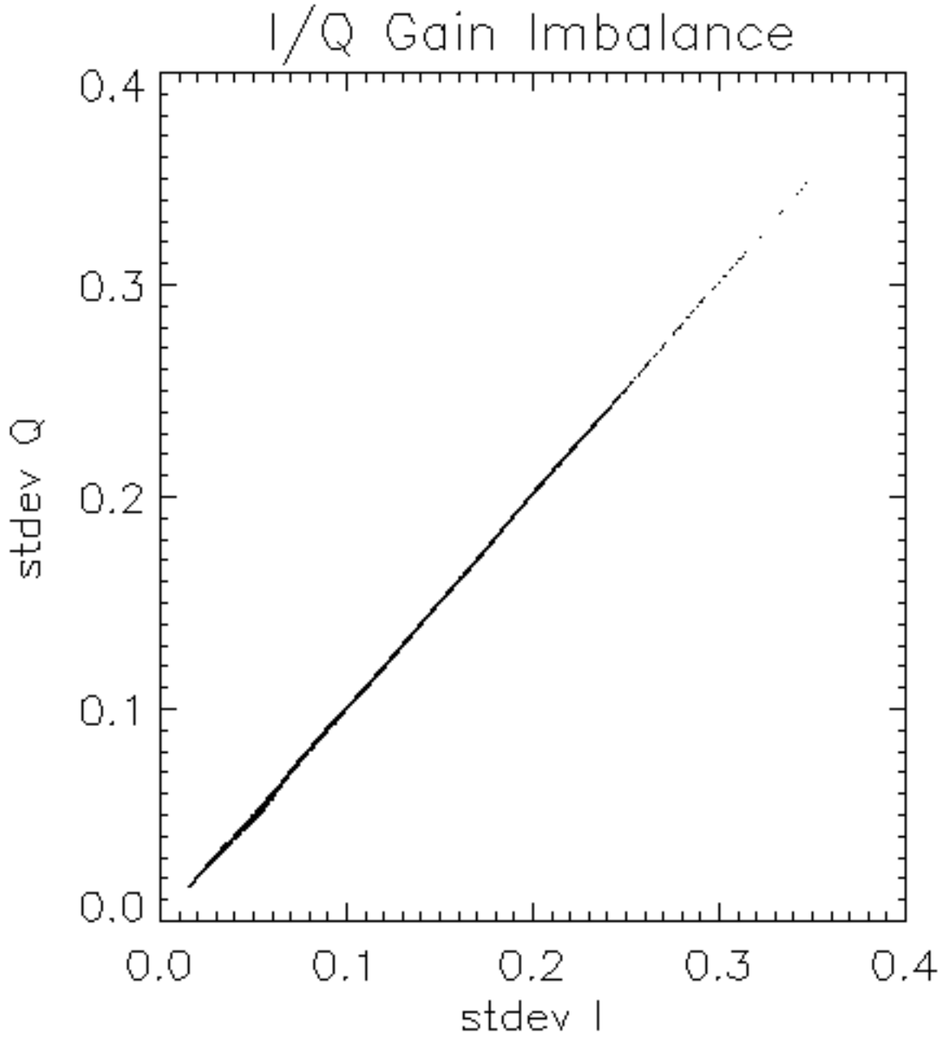

Reference: 2003-06-12 14:10:32 V
Test : 2004-04-20 20:48:38 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

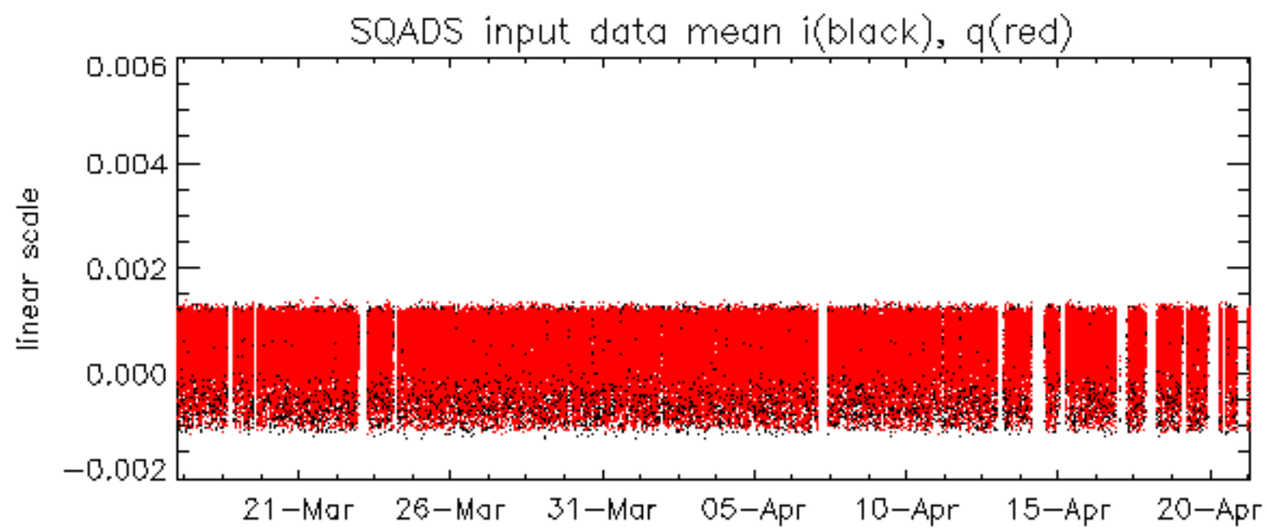

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-04-20 20:47:18 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

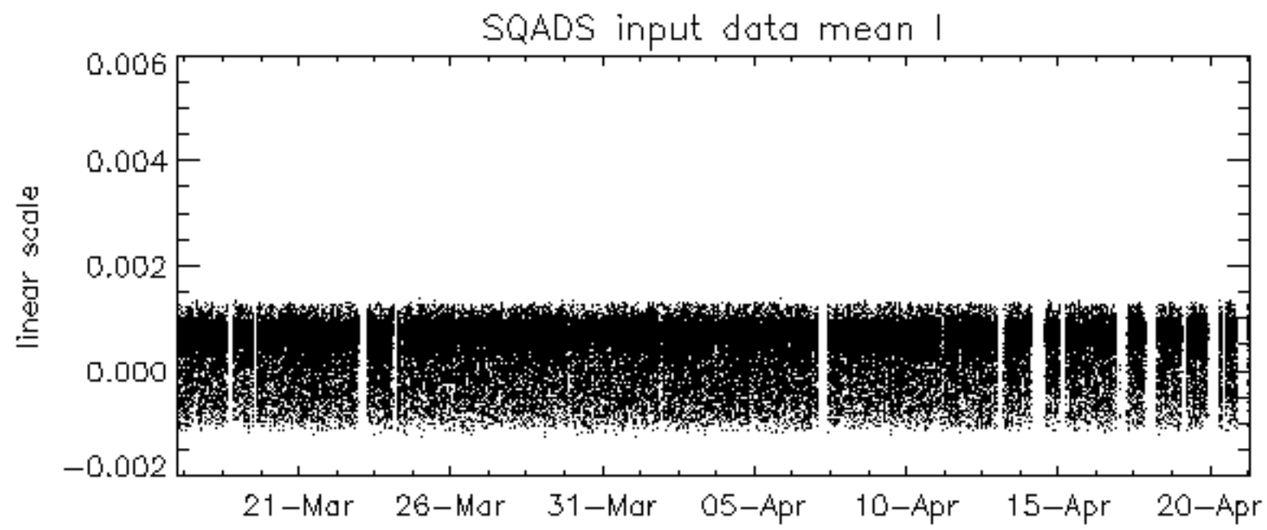

Reference: 2003-06-12 14:08:52 H
Test : 2004-04-20 20:47:18 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

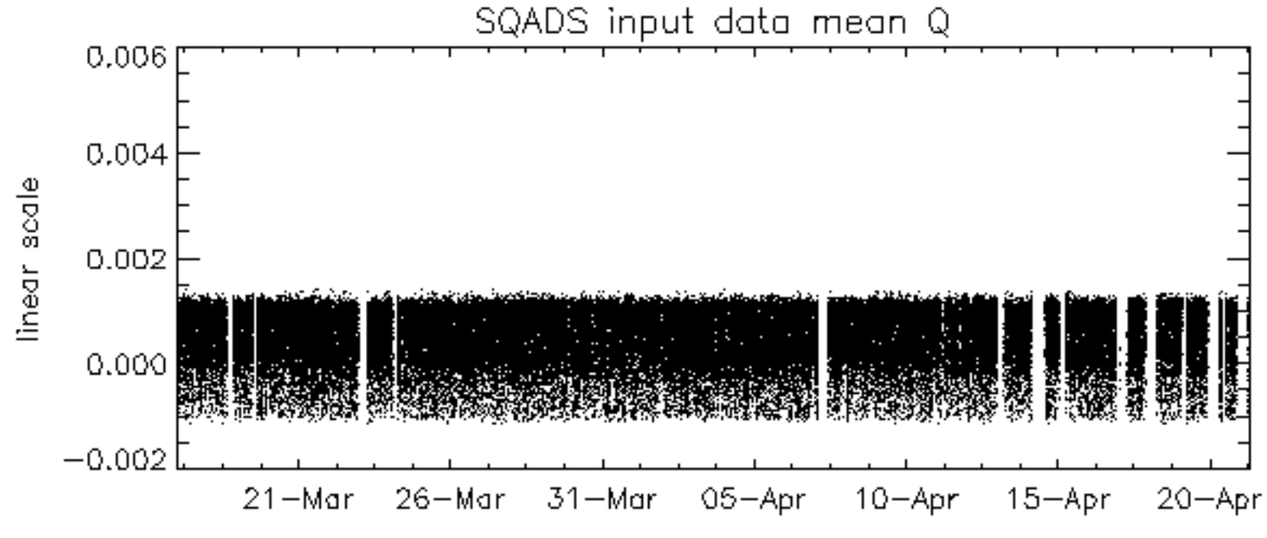

Reference: 2001-02-09 14:08:23 V
Test : 2004-04-20 20:48:38 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

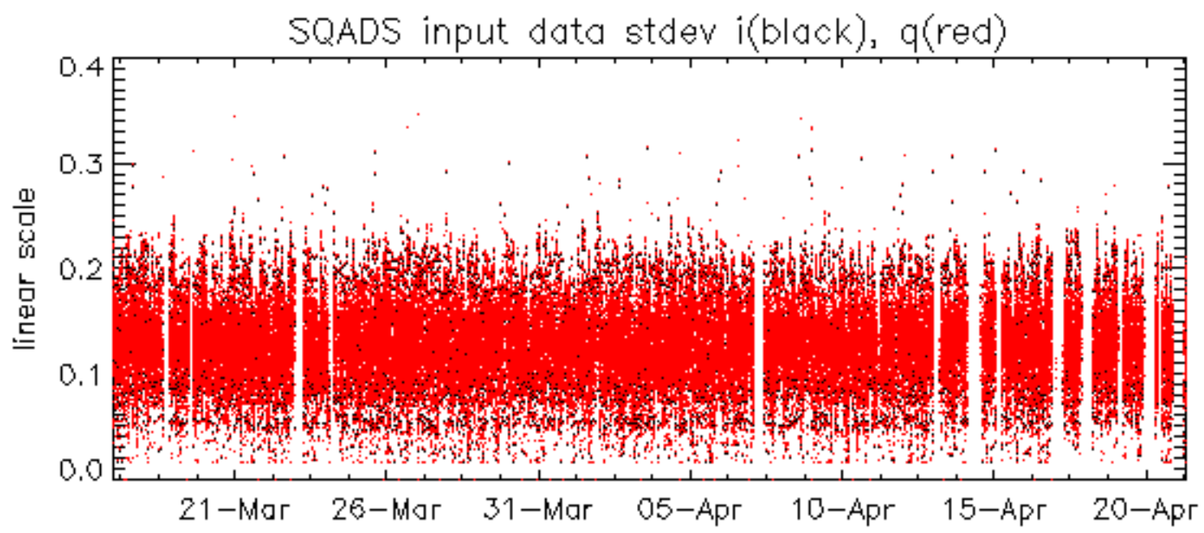

Reference: 2003-06-12 14:10:32 V
Test : 2004-04-20 20:48:38 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

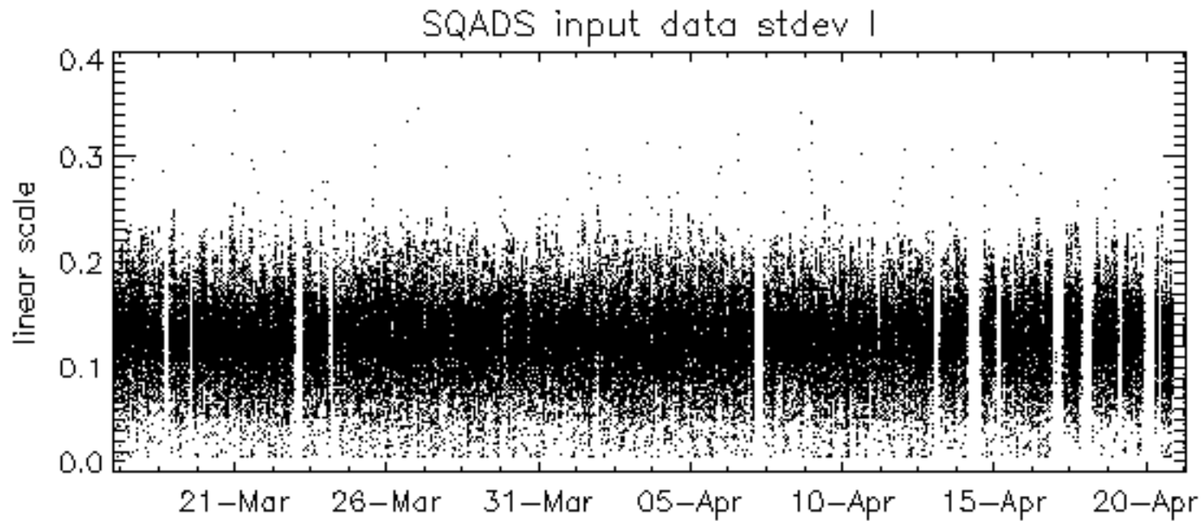

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

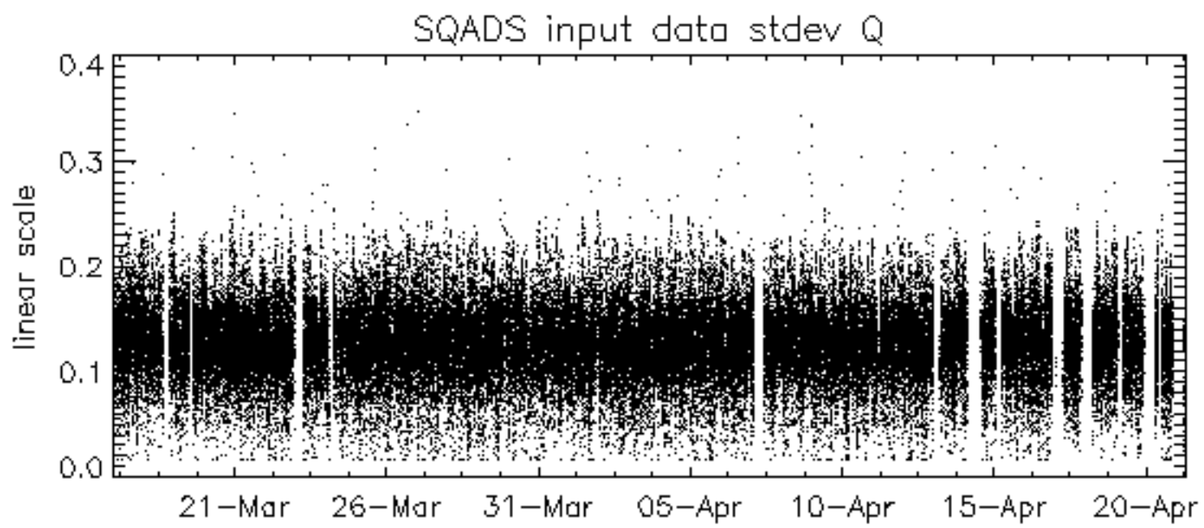

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

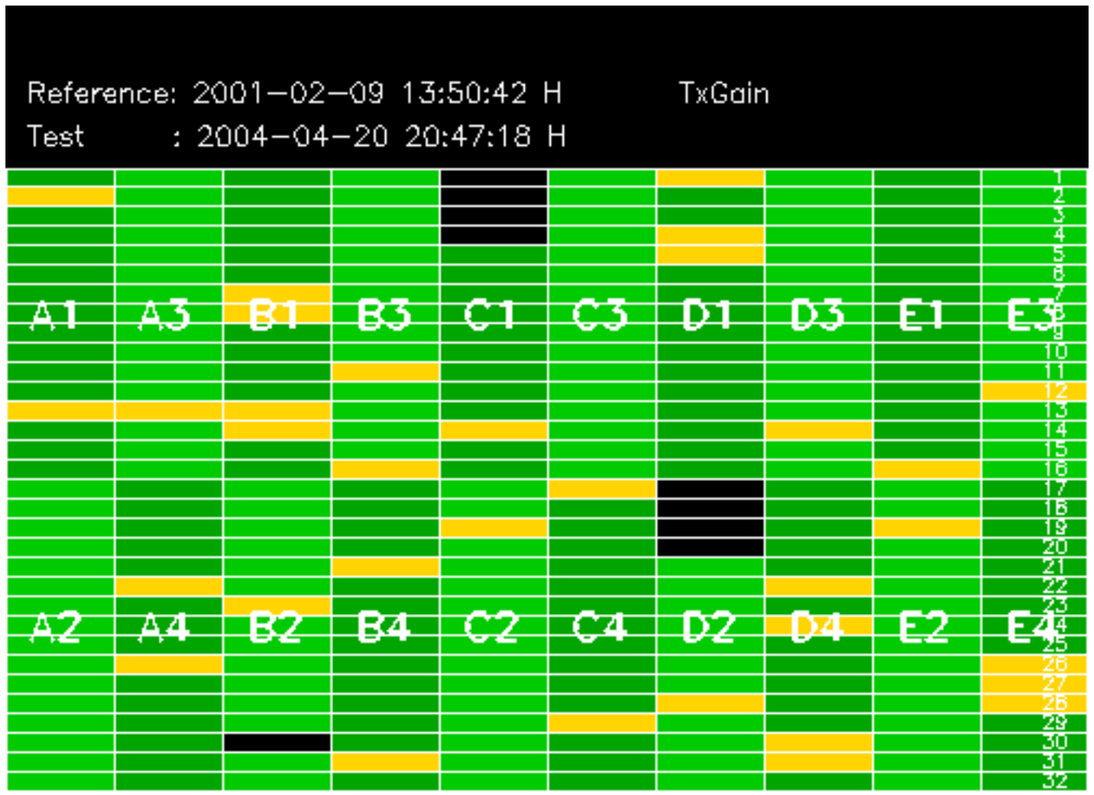

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

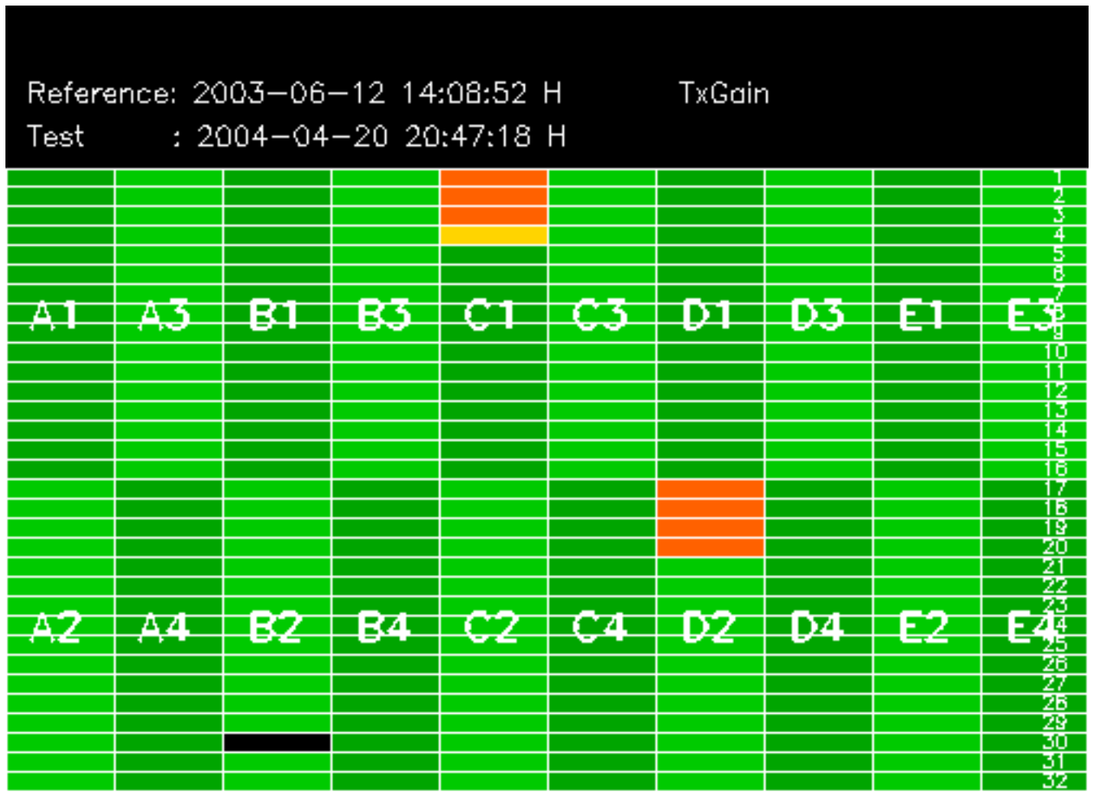

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

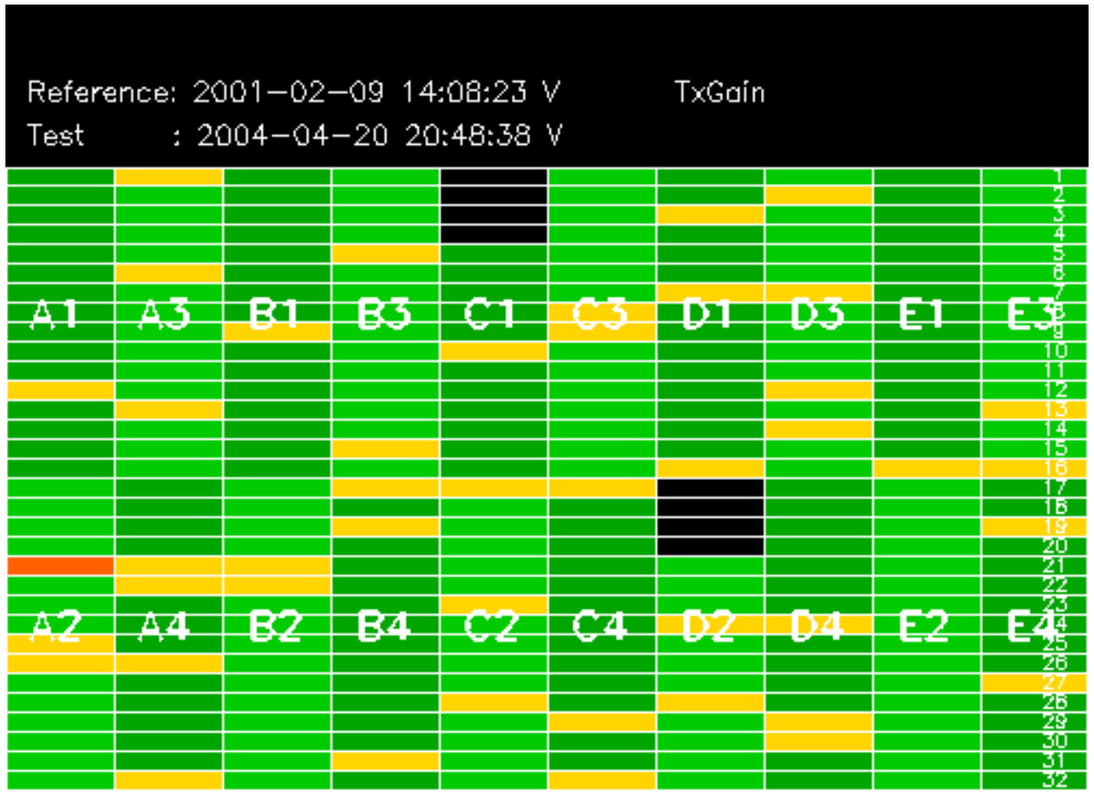

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

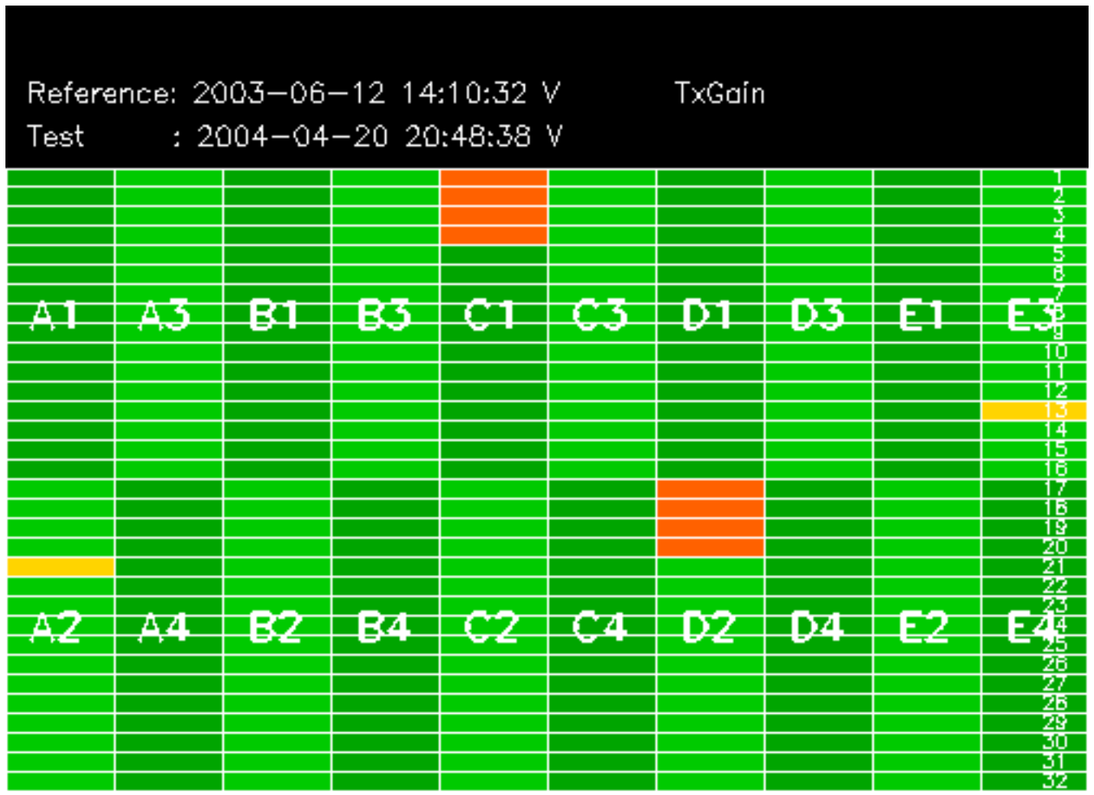

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

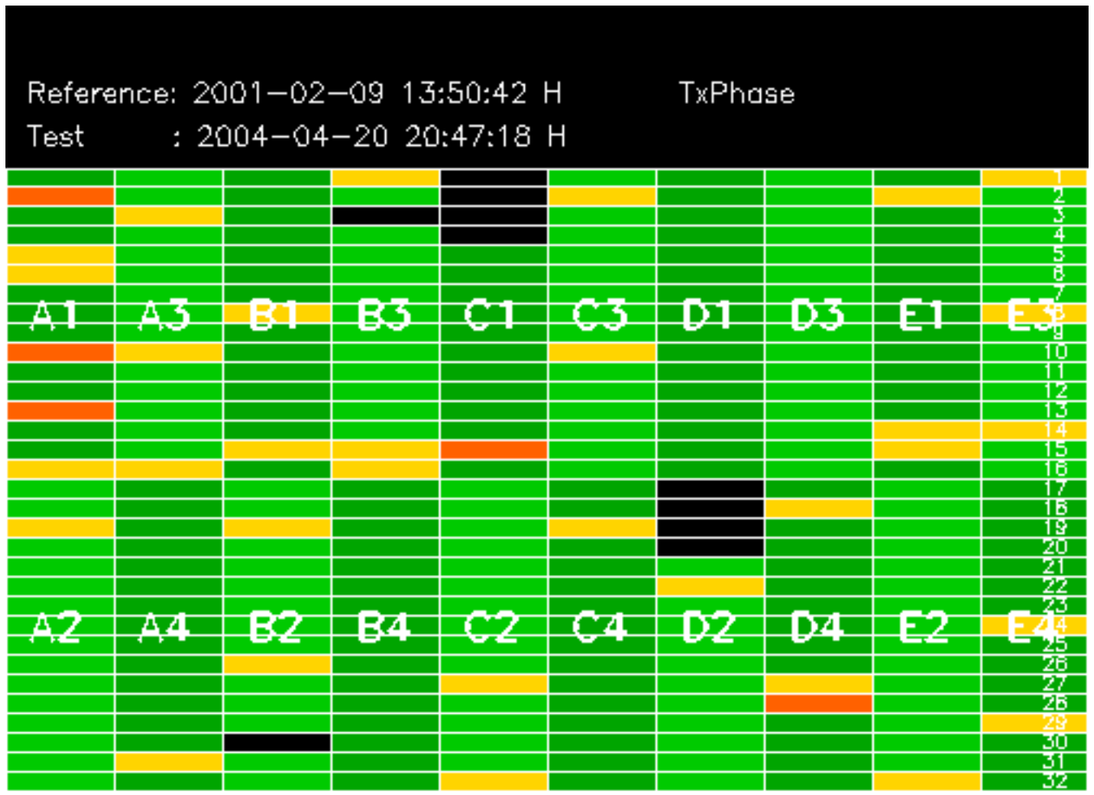

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

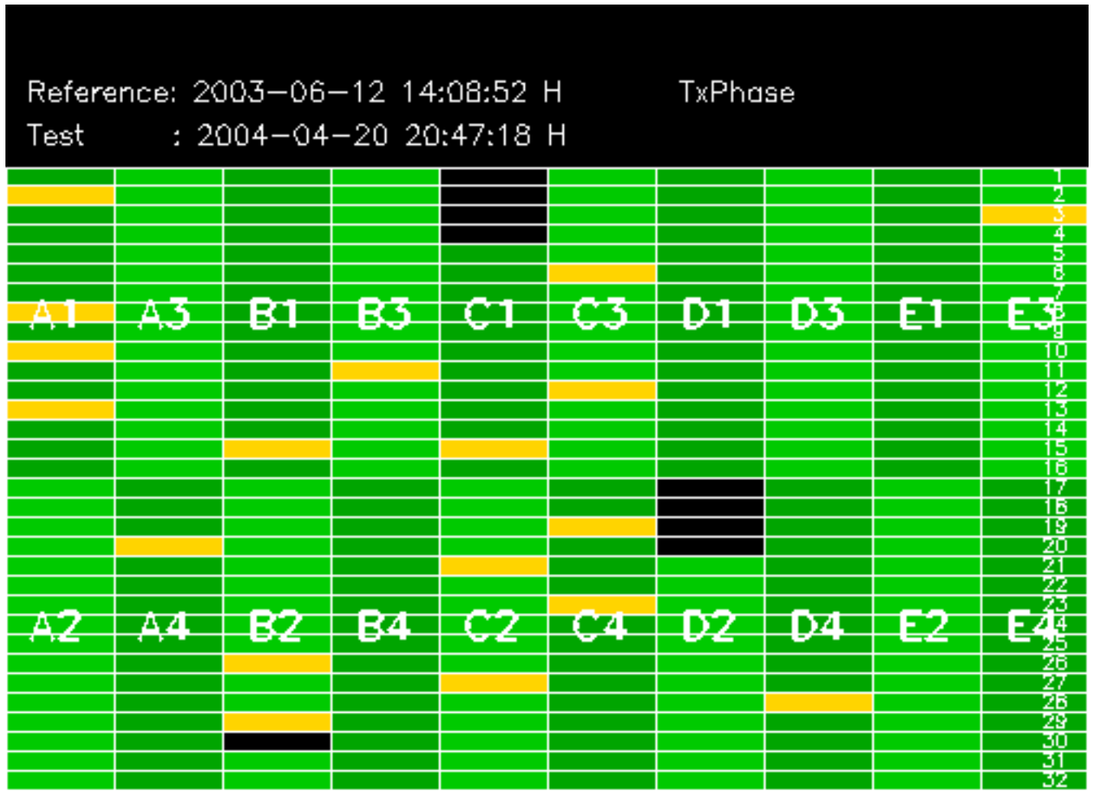

Reference: 2001-02-09 13:50:42 H
Test : 2004-04-20 20:47:18 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

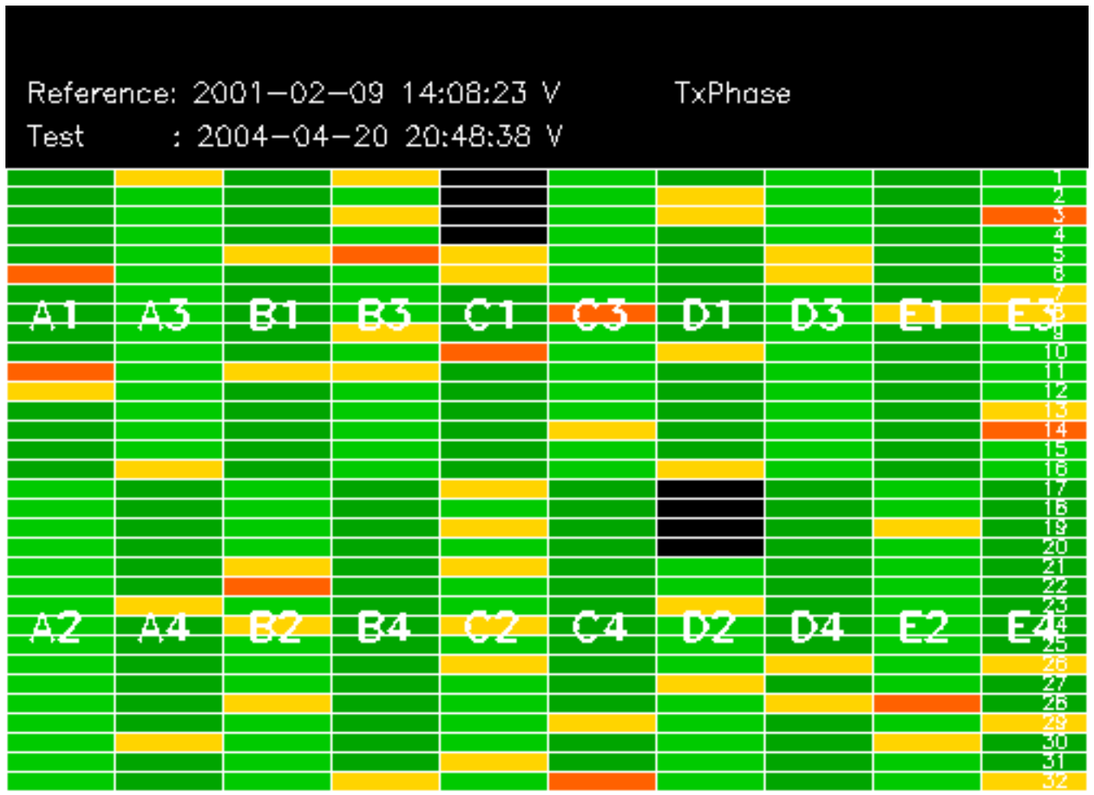

Reference: 2003-06-12 14:08:52 H
Test : 2004-04-20 20:47:18 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

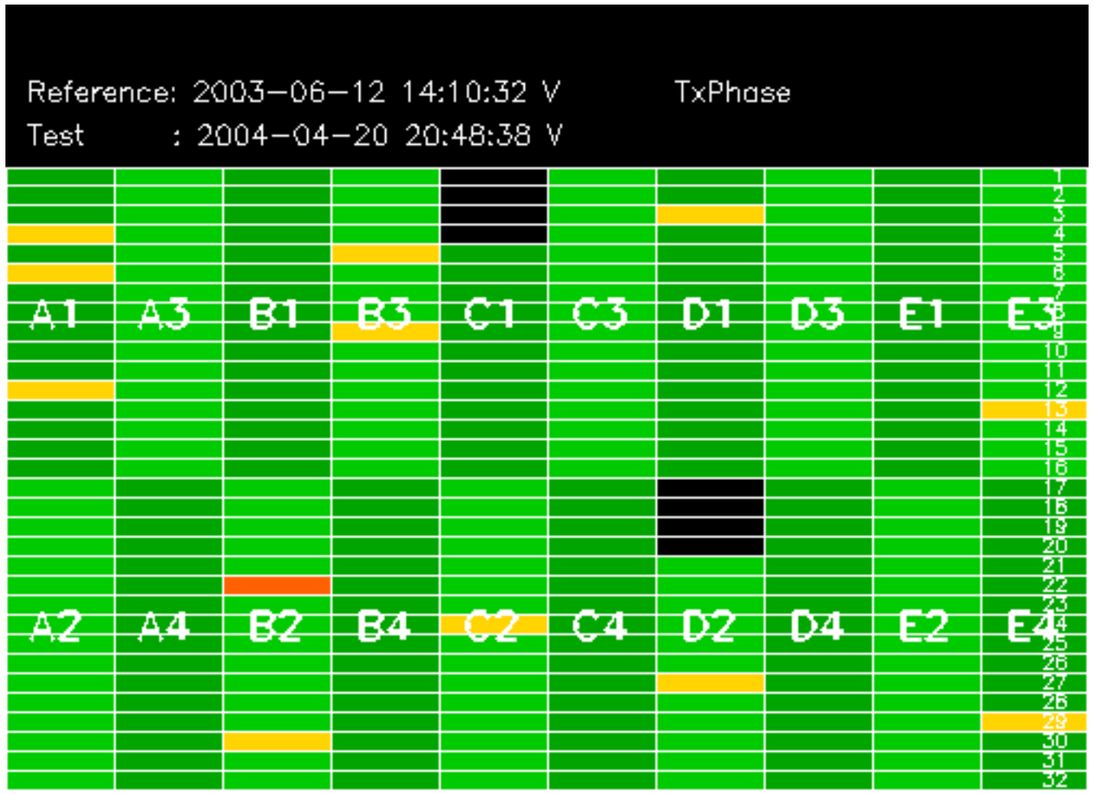

Reference: 2001-02-09 14:08:23 V
Test : 2004-04-20 20:48:38 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-04-20 20:48:38 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2001-02-09 13:50:42 H
Test : 2004-04-20 20:47:18 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-04-20 20:47:18 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-04-20 20:48:38 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-04-20 20:48:38 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

-ASAR planned unavailability from 20-APR-2004 08:15:46 to 20-APR-2004 08:23:31 to investigate module B2-30 H/Tx problem.
-ASAR not planned unavailability from 20-APR-2004 10:00:54 to 20-APR-2004 11:56:40.